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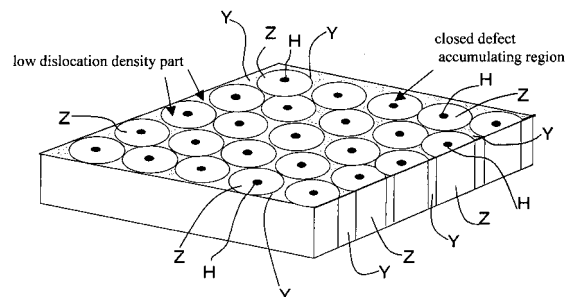
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(54) **Single crystal GaN substrate, method of growing same and method of producing same**

(57) Seeds are implanted in a regular pattern upon an undersubstrate. A GaN crystal is grown on the seed implanted undersubstrate by a facet growth method. The facet growth makes facet pits above the seeds. The facets assemble dislocations to the pit bottoms from neighboring regions and make closed defect accumulating regions (H) under the facet bottoms. The closed defect accumulating regions (H) arrest dislocations permanently. Release of dislocations, radial planar defect assemblies and linear defect assemblies are forbidden. The surrounding accompanying low dislocation single crystal regions (Z) and extra low dislocation single crystal regions (Y) are low dislocation density single crystals.

Fig.7



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| | | | C23C H01L C30B |
| The present search report has been drawn up for all claims | | | |
| Place of search The Hague | | Date of completion of the search 2 April 2008 | Examiner Schuhmacher, Jörg |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p> | | | |

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